

Preface

Smart cities are a recent phenomenon, but they are spreading quickly all over the world. This vibrant and innovative urban strategy is conceived like an effective instrument to face with the increasing urbanization interesting large and medium cities in the five continents. Despite the topic seems to be well-known and applied by both academicians and practitioners, contents and boundaries of this concept are still confused and jeopardized. It is also the result of a bottom-up trend, as cities are implementing their own smart vision far from the academic theoretical guidelines, following the spontaneous projects issued by local governments, firms, and citizens.

The present book collects a set of essays regarding all the aspects of smart city investigation: from definition to implementation, from theoretical backgrounds to empirical observation. It is a result of a multiyear research activity, putting together both the academic studies about this topic and the political and professional experience of the author. The aim of this work is to deliver an up-to-dated, real-time vision about smart cities all over the world, suggesting a comprehensive definition, a summary of strategic visions and implementations, and some guidelines to develop and implement performance measurements able to evaluate the effectiveness and capability of smart city programs to create economic and public value in urban innovative systems.

Chapter 1 introduces the topic summarizing some key aspects regarding smart cities, to guide the reader in interpreting both the scientific literature and the empirical implementation of smart projects. The global aspect of this urban strategy, on one side represents a unifying point, joining almost all the larger metropolis in pursuing similar goals, on the other side requires to better distinguish standard approaches and distinctive choices. During the latest ten years, several cities all over the world have been starting to develop their own smart strategy, aiming at improving the quality of life of citizens and reducing environmental footprint. However, smart cities show heterogeneous profiles, as they both reflect the history and geographical individuality of each city and implement the political address of their own local and central governments. Moreover, also the scientific researches lack of a shared definition of smart city; and smart city and digital city are often confused each other owing to the large use of ICT in both of them. In this chapter,

the smart city concept is analyzed considering two main aspects: the strategic vision of a smart city and its benefits. A smart city strategic vision is of paramount importance to effectively drive local policies in implementing smart initiatives pursuing shared goals. Smart city benefits are often declared, but not measured; to better define smart city performance is indispensable to realize better outcomes for citizens and other stakeholders.

Also Chap. 2 investigates about the smart city definition, explicitly comparing the strategic vision of its main players, that are academia, industry, and government. To implement a smart city is a complex task, involving different aspects and several actors. As a smart city is especially based on the use of innovative technologies in the urban area, three main actors are involved in its implementation: local government, research institutions, and technology vendors. Local government drives the smart city planning and rules the general aspects; research institutions offer their competences in studying and experimenting innovative technologies and solutions; vendors produce and sell technological platforms and infrastructures for the smart city realization. A linking role is played by consulting companies, offering direction services in complex projects. This chapter analyses the most cited scientific and professional publications to verify the different points of view issued by these different smart city actors and compares their smart city definition.

Chapter 3 addresses the role of ICT in realizing a smarter city. Smart cities use ICT to implement their smart strategies and to collect and deliver information to different users. For this reason, a smart city somewhat joins different aspects of living in the urban area and links several concepts such as wired city, virtual city, intelligent city, information city, digital city, knowledge city, and so on. This deep use of ICT enhances the role of the smart city in collecting and delivering data, information and knowledge affecting the daily life and improving its quality thanks to e_services, a deeper involvement of citizens in the city governance and their proactive role thanks to e_democracy and e_participation. In this chapter the link between smart city and ICT is explored, aiming to outline the pervasive role of ICT in smart projects, but also to highlight smart projects using other technologies or no technologies at all but simply based on the citizens' behaviors or the governance style.

Chapter 4 deals with a capital argument, generally neglected: the evaluation of smart city benefits. A smart city is an urban strategy using technology and promising to improve the quality of life for citizens. However, few practices are known, where cities really measure the impact of smart initiatives on the daily life of their inhabitants. Independent institutions and research centers issue smart city rankings, based on smart projects implementation or technological infrastructures present in cities, but no instruments are applied to really verify if and how much a smart program affects people living in city. This chapter suggests how to develop a Smart City Performance Dashboard to measure and evaluate the capacity of a smart strategy to impact on the quality of life. Based on the most known urban indicators worldwide, this work defines a five-step path for implementing a standard but city-tailored dashboard to both support smart city investments and to evaluate their performance.

As the aim of this book is both to clarify the conceptual aspects of the smart city topic and to investigate about its concrete implementations, Chap. 5, written with co-author Clara Benevolo, regards one of the pillars of a smarter city, that is smart mobility. Mobility is a critical factor for better living in cities. Transport are crucial for moving from home to work and to access to urban services. However, transport is also one of the most problematic aspects of the urbanization: the enlargement of city dimensions produces traffic congestion, difficulties in delivering public transport services all over the metropolitan area and an increasing of pollution. Smart Mobility is a subset of smart initiatives, especially aiming at planning intelligent transport solutions, concurrently responding to all the smart goals, that are: to reduce pollution, to increase the quality of public services and to better connect city neighborhoods thanks to mobility data collection, processing and delivering. This chapter defines a general framework to analyze characteristics, goals and benefits pursued by smart mobility projects, investigating also the role of ICT in implementing these projects. Several case studies validate the theoretical framework.

Finally, Chap. 6 tells the story of two best smart city experiences in Europe. Meanwhile academic researchers have been studying the theoretical aspects of a smart city, suggesting definitions and models for their understanding, the largest cities all over the world have been starting to realize smart projects to create a smarter living in urban areas. As the smart city movement is spontaneous, each city pursues its own goals prioritizing smart initiatives of different nature: sometimes the use of ICT prevails, some others green energy production is at the core of smart programs; and so on. This chapter studies two smart city best practices: Amsterdam and Genoa. Amsterdam has been the first city all over the world implementing a smart city strategy addressing not only one dimension of living, but with a comprehensive scope. Genoa won the highest number of European calls funding smart city projects and the Genoa Smart City Association aims to compose an integrated smart projects portfolio addressing all the aspects of the metropolitan life. Both these cities are interesting case studies for supporting further implementation in smart cities.

All the chapters are strongly based on the most cited scientific papers defining smart city models and frameworks. Besides the academic basis, a high number of empirical cases are described, supporting the theoretical modeling emerging from the six chapters. At the end of the reading, smart cities all over the world emerge like a promising strategic vision, where technology, political choices and human capital together work to create the best condition for everyone who lives in a large city.

Genoa, Italy
July 2016

Renata Paola Dameri

Smart City Implementation

Creating Economic and Public Value in Innovative Urban
Systems

Dameri, R.P.

2017, XIII, 154 p. 53 illus., 3 illus. in color., Hardcover

ISBN: 978-3-319-45765-9